Frankly Speaking

What is a Traffic Engineer?

TRAFFIC ENGINEERING has contributed immeasurably to the public welfare. Through our profession, improvements have been made in the design and operation of our highways. The traffic accident and death toll has been held in check to some extent. However, much greater improvement could be made if the general public were better informed of the important functions and capabilities of the traffic engineer.

We speak of the three E's—Engineering, Education and Enforcement—but have we devoted enough time and effort to Education about Traffic Engineering? Who most needs education? Professor Morrison, in his article in this issue, cites that short courses in traffic engineering include few, if any, highway engineers, city planners or architects. As he points out, apparently they do not recognize the need for traffic engineering training and there is evidence that those who need it most do not even know there is such a science as traffic engineering.

In view of the lack of knowledge and understanding about our profession among technical persons, dealing with related problems, how can we expect public officials, or the general public, to have any real conception of traffic engineering or what it can accomplish?

Too often, as engineers, we over-estimate the public knowledge of the simple truths which to us are commonplace. On numerous occasions, in groups of intelligent people, I have been asked, "What does a traffic engineer do?" This indicates that we have an educational function to perform in order to spread an understanding of what traffic engineering is and what it can do. This must be directed, first, to those who design and build traffic facilities; second, to those who administer and operate them; and third, to those who use the facilities.

By our engineering analysis of the human and physical elements related to street and highway traffic, we are able to contribute to those groups valuable information which is urgently needed to obtain safe, convenient and economical transportation of persons and goods. Let us make a greater effort to evaluate our science and to simplify its broad and intricate meanings for public understanding.

Richard W. Sivr

Acting Editor, TRAFFIC ENGINEERING.

VOLUME XV AUGUST, 1945 NUMBER 11

Education Needed for Solving Present and Future Traffic Problems

by ROGER L. MORRISON, MEMBER, I.T.E.
Professor of Highway Engineering and Transport, University of Michigan

ALL indications seem to be that immediately after the war ends there will be an enormous upsurge of motor traffic, with accompanying increase of congestion and accident problems. Also there will probably be the greatest expenditures for street and highway improvements that the world has ever seen. The need for applying sound traffic engineering principles in the design as well as the operation of extensive highway facilities will be very great.

This means that in addition to a need for hundreds of traffic engineers who will be concerned mainly with problems of operation, there will be a need for many traffic engineers of broad vision who will be primarily concerned with the planning of new or improved traffic facilities which will be adequate to meet the present and future needs of motor transportation.

Fundamentals Are Important

It seems evident that all highway engineers and all city planners should have a course in traffic engineering. Highways, both rural and urban, should be structurally sound and economically designed. Aesthetics should also be given proper consideration, but above all, the highways should be located, designed and constructed so as to carry the traffic from origin to destination with maximum efficiency and safety. It is realized, of course, that often these principal objectives must be sacrificed to some extent to obtain other necessary or desirable ends, but they should always be thoroughly understood and be given careful consideration. Unfortunately there are many instances where other considerations are given more weight, or certain traffic provisions are completely overlooked because the designers have never given any special study to traffic engineering. Every traffic engineer knows of instances where this has resulted in unnecessary accidents or increased the cost of vehicle operation, or both.

Industrial architects, and those who design other large buildings, should also know something about traffic engineering or employ traffic engineers in connection with the making of their designs, now that motor transportation has become such a vital element in practically all industrial and other business activities.

Not Always Practical In Colleges

It is not always practical to introduce adequate traffic engineering training into college courses in highway engineering, city planning and architecture because whenever anything is added to a full course something else must be taken out to make room for it, and there is almost always violent objection to that. Also for the thousands of highway engineers, city planners and architects who have already graduated, it is too late to do anything about their undergraduate college courses.

The obvious remedy for this situation is short courses in traffic engineering, given in concentrated periods of a week or two, or evening courses given at locations convenient to those who wish to take them. My own experience, however, has been that students in such courses include few, if any, highway engineers, city planners or architects. Apparently they do not

recognize the need of any traffc engineering training, and there is evidence that some of the architects who need it most do not even know that there is such a thing as traffic engineering. Fortunately, more and more highway departments are including traffic engineers in their organizations and, I trust, these traffic engineers are consulted more and more in connection with highway design as well as operation. I know that this is true in many cases and where it is true it is, perhaps, not particularly necessary that the designers should have much personal knowledge of traffic engineering.

Content Limited

It is probable that, at least for some time, the types of traffic engineering education which will be available to the largest number of persons will be the short period and evening classes for in-service training. Due to the limited time available, the content of such courses must necessarily be limited but they can give the student an introduction to the subject including those phases with which he may not have come in direct contact in connection with his own work. They can broaden his general understanding of traffic engineering activities and can acquaint him with sources of information for further study by himself.

It is possible that some colleges may establish regular four-year undergraduate courses in traffic engineering, but that seems highly improbable at present and I personally doubt very much that it is desirable. Few engineering students know, when they enter college, just what they want to make their life's work. In fact, most of them, because of limited knowledge, have pretty unsubstantial reasons even for choosing any particular one of the main branches of engineering, such as civil, mechanical, electrical or chemical.

At the University of Michigan, civil engineering students, particularly in their senior year, choose certain options, one of those available being traffic engineering, but they still have a general civil engineering training.

Graduate Work Seems the Best

For the graduate engineer who is engaged in traffic work, or intends to go into it, the best educational training would seem to be a year or more of graduate work, and probably several such graduate courses should be available in various parts of the country.

I believe that one of the most important questions in connection with setting up a graduate course in traffic engineering is whether it should be strictly technical, going deeply into the details of various traffic engineering operations, or be broader in scope at the expense of some detailed traffic instruction.

Any man who has sufficient foresight and ambition to spend a year in graduate work is very apt to have the qualities which will take him to the top of his profession, where he will be more concerned with the general science of moving traffic expeditiously than with the more detailed arts of such things as the efficient placement of signals, signs and markings and the removal of local accident hazards, though he must, of course, understand these things.

Should Have Real Ability

That means that he will be an important official, dealing on a basis of equality with other important officials, as well as with many organizations, the press and the general public. He should understand personnel management, public administration, public finance, statistical methods and general economics. He should be able to determine with reasonable accuracy the effect of various extensive improvements upon property values and the life of the community, and he should be an effective public speaker, even though he might be a bit weak on such things as the details of operation of

various makes of traffc signals and mcchanical traffic counters.

Certainly no one should imagine that this could be accomplished by a year, or any number of years, of academic study, but the statement of desirable qualifications should suggest certain academic subjects the study of which would help in laying the foundation for future development in the right direction.

Would Not Omit Technical Subjects

The above discussion does not mean that I would omit technical subjects from the graduate course. It might be, for instance, roughly half technical and half general, with considerable latitude given to the student in the choice of general subjects.

Whatever particular courses might be included, I believe that the main objective should be a training which would help in the development of broad-visioned traffic engineering officials rather than merely skillful traffic technicians. I would try to train them not to lose sight of the forest because of the trees.

ROAD SAFETY IN ENGLAND

A report has been published by H. M. Stationery Office of a committee presided over by Mr. Philip Noel-Baker, parliamentary secretary to the Ministry of War Transport, England, which has been considering what will be required under post-war conditions to deal with the road accident problem.

The report is interim in character and gives special attention to the problems likely to arise in the early post-war period. Certain long-term measures are considered in principle, and particularly those having an important bearing on the post-war planning of roads and on town and country planning.

The committee concludes that vigorous action is necessary not only to reduce the present accident figures but to prevent a substantial increase which is otherwise likely to occur when traffic on the roads is back to pre-war volume. They suggest that this must be both a national and a local responsibility.

In the immediate post-war period an intensive propaganda campaign is recommended, to remind all road users of the special dangers which will then exist. Among a number of recommendations, the committee suggests that driving tests should be made more searching and that the precepts of the highway code should be made so well known that in time they may become part of the instinctive behavior of road users. Roads should, they consider, be improved as quickly as possible, to fit them for the traffic using them, and the principle of segregating classes of traffic should be adopted wherever possible. The parking of vehicles in busy streets should be prohibited, and adequate parking space off the highway should be provided. Vehicles should be tested regularly to insure that they are in a fit condition to be used on the roads. The government has not yet considered the report, and is in no way committed to acceptance of its recommendations. —*Highway Research Abstracts.*

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VANDALISM AND PARKING METERS

A fine of $300 or a 30-day jail sentence is in store for individuals caught damaging parking meters in Pasco, Wash., under a new city ordinance. The old limit of $100 fine apparently was not strong enough to discourage such vandalism.—*Public Administration Clearing House.*

Pasadena Tackles its Parking Problem

by J. MARSHALL MILLER, *Planning Director, City Planning Commission, Pasadena, Calif.*

SEVERAL months ago Ross T. Shoaf, assistant traffic engineer of the City of San Francisco, began a talk on parking terminal facilities with the statement, "Today we are going to talk about keeping vehicles out of the central business district." The point which this speaker developed was that the parking problem is but one phase of the over-all vehicular transportation problem. As Mr. Shoaf indicated, we must have clearly in mind the broad and basic problems pertaining to transportation as a whole before we can act intelligently on any portion of the problem. The ramifications of the so-called parking problem are many. If one were to review the dozens of articles recently written on this subject it would be easy to become confused. Specific problems in localities are many and varied. The recommended methods of attack and partial solutions are almost as numerous as the articles written about them. From this mass of information, two points may be concluded: (1) that nearly every community has a parking problem which is ever increasing; and (2) the attempted solutions thus far have been but preliminary steps toward the desired goal of adequate parking facilities to meet all parking needs.

Restricted parking lot for staff of Board of Education administration building in Civic Center area.

Lack of Understanding

One outstanding hindrance which has delayed action in meeting this problem has been a lack of understanding—serious and basic understanding by those vitally concerned: the merchant, the land owner, the shopper and local government. A lack of understanding and a lack of realization of the importance of the problem is the chief reason why those involved have not recognized their responsibility. In most communities it has been a case of "passing the buck." The merchant claims that it is the problem of the land owner; the land owner in turn says it is the problem of business and the responsibility of the merchant or someone else; the shopper feels that parking space should be provided close to the shopping district; the city government for the most part has not given much attention to parking other than the control of parking at the curb and the painting of red on the curb to satisfy loading and unloading demands. It is evident that a plan of action is necessary wherein responsibilities are determined and agreed upon. In most instances the major hurdles, which too often are stumbling blocks, have been: (1) imagination; (2) sound planning; and (3) costs.

The present article was called for essentially as a progress report of the

method of attack and action taken in one community — namely Pasadena, California. Before referring to specific steps it must be pointed out that Southern California, like several other sections of the country, has a peculiar problem in that the ratio of cars per capita is very high; reasons for this are many but will not be dealt with here. Another peculiar problem is that in the rather rapid growth of many of our communities which have spread over great areas, our so-called downtown shopping areas have grown up in string-like fashion along major streets. The result is that our parking needs are not only great but they are spread rather than concentrated. The solution to the parking problems in conjunction with our business districts is not in the provision of one or two large lots, possibly municipally owned; it is rather the provision of a great number of parking areas located to meet the diversified and extended needs.

New Approach

During years past numerous parking surveys have been conducted, maps drawn, and considerable oratory engaged in, but few results have been evident. About a year ago the City Planning Commission determined on a new program of action. To overcome the first hurdle of adequate understanding, the Planning Commission called together a group of citizens representing different organizations within the community—this group to act as a citizens' advisory committee to the Planning Commission. After preliminary discussions it was agreed that each member of this citizens' committee should endeavor to acquaint himself with one phase of the parking problem as it related either to our own community or was handled in other communities. After a period of research, reports were presented and our problems again reviewed in light of the facts at hand. Three things were accomplished through these meetings and reports: (1) actual and factual material was gathered and presented; (2) the members of the committee, and indirectly the organizations which they represented, were introduced to a fuller awareness of the problems; (3) by self education and wide-spread discussion with organizations, a community-wide interest was aroused.

Several members of this committee then shared the responsibility of presenting a report of their findings with their recommendations. Among the many interesting results of the committee survey it was found that by relating the number of cars capable of parking at the curb to the number of establishments, there were approximately two curb parking spaces per establishment if only business establishments were considered, and less than one curb parking space per establishment if professional offices were included. Inasmuch as this was their report, the recommendations for the most part had the backing, not only of the committee members, but of the organizations which they represented. This report was made to the Planning Commission, which, in turn, submitted a series of recommendations to the citizens through the legislative branch of government. The recommendations of the Planning Commission were based almost entirely upon the recommendations of the citizens' committee.

Getting Action

The main recommendations were: (1) that the Board of City Directors (corresponding to a city council) send a communication to each merchant, school, church or other organization emphasizing the importance of the parking problem as it effects every citizen and organization in the community; (2) that ordinance requirements be established which would re-

Parking lot adjacent to market. By setback, landscaped area adjacent to sidewalk, preservation of trees and protective walls, such areas have proven ideal buffers between commercial and residential use.

quire the provision of adequate off-street parking facilities in conjunction with all structures, institutions or activities which involve the parking or potential parking of automobiles. The responsibility for the provision of off-street parking would therefore be associated to the only logical parties, namely, the developers of property, (3) the purchase by the city of areas adjacent to municipal buildings for the parking by both city employes and patrons of these civic structures; (4) that owners and merchants in each block cooperate through the several merchants' organizations and with the Planning Commission in the preparation of plans to meet the parking needs for both employes and customers, and where possible, take advantage of the California Vehicle Parking District Act which provides enabling legislation for the creation of parking districts; (5) that in all subsequent property development or redevelopment that off-street parking space should be required for the loading and unloading of freight; (6) that logical and acceptable means of financing the several types of off-street parking be determined; (7) that strategic parking areas should be provided in conjunction with our proposed system of freeways; (8) that where parking lots are created, either public or private, every attempt should be made to make them as attractive as possible.

These recommendations in addition to the more extended report of the Citizens' Advisory Committee were widely publicized and presented in full in local papers. It was not long before numerous organizations, civic and otherwise, were setting up committees to study their own parking needs. The Planning Commission has now completed final drafts of ordinance requirements which, if approved, will become portions of our local zoning ordinance. These ordinance requirements cover off-street parking in conjunction with all uses from single family through industrial.

Educational Meetings

While progress was being made on specific recommendations, our local Citizens' Council for Planning conducted a series of educational meetings on various phases of the parking problem. Special speakers were presented, discussion panels were organized, exhibits were shown and special invitations were extended to merchants and business property owners to attend. The combined result was a widespread awareness of parking needs throughout the community. Additional interest was created through a study conducted by a group of architectural students from the University of Southern California. The students undertook the redevelopment of a portion of our older business section as one of their special planning problems. The resulting charts and plans immediately caught the eye of the merchant and owner and suggested various ways of providing additional parking areas. One very positive stimulus which occurred during this period was the purchase by two large stores of properties at the edge of our central business district where they plan to provide adequate off-street

parking adjacent to their buildings. To the established merchant this meant competition and possible loss of customers. Through a concerted drive sponsored by our merchants' association which conducted a block by block and merchant by merchant campaign, the seriousness of parking was brought home to the owners of business properties. Realizing the need for cooperation, the property owners' division of our Realty Board, the members of which represent most of the land holdings in the business district, have now joined with our merchants' association, chamber of commerce and banking institutions in forming a corporation to take action on our parking problem. The objectives of this organization, as currently agreed to, will be the sponsoring of a district-wide survey and preparation of a master parking plan, and the raising of funds to provide adequate off-street parking areas. Twenty-five directors of the organization represent, for the most part, the leading property owners in the greater business area.

Enabling Legislation

State legislation passed at the recent session of the legislature, makes the provision of parking a public purpose. This legislation will give the city the right to condemn property if necessary to provide for parking not only adjacent to municipal buildings but in any area where a parking need is evident. This does not mean that the city will purchase and develop off-street parking lots from general funds to meet all parking needs, but groups of property owners in any one area could pool their funds for the purchase and development of parking areas and request the city to use the power of condemnation along with the funds provided to secure the area or areas needed. It is understood that areas purchased by this method would serve a public or area need. It is anticipated that our community will eventually have a series of municipally owned off-street parking areas.

In passing, it should be pointed out that a number of our forward looking business establishments have already provided some off-street parking. It has been definitely established that the provision of off-street parking in conjunction with commercial enterprises is good business practice, and it is this point which we have continually emphasized. Since the original letters resulting from the Planning Commission recommendations were sent out from the city hall, and with the subsequent discussions on the problem, there have been a number of areas for parking purchased by stores and banks, both large and small.

Several additional observations might be made. In the provision of adequate off-street parking in conjunction with commercial structures, there is a transition from front foot values to area values. As more and more customers approach a store from the parking area, the old front on the "main street" becomes less important. An excellent example of this is shown by one of our new and larger stores planned for our community. *More parking area is being provided than retail floor area.* The building itself is set back 70 feet from the business street on which the property abuts. The main entrances are from the parking areas immediately adjacent. This is an example of the trend which may easily revolutionize the design of commercial buildings. The "fronts" may no longer be on the main street but might easily face areas from which direction most costomers will approach. Need it be pointed out that this will be a new problem for our tax assessors?

Another observation is the tug-of-

war between decentralization and stability as related to central shopping facilities. In many of our communities, decentralization of community-wide shopping is well under way. New branches of our larger chain and regional stores are locating where adequate off-street parking can be provided. Downtown shopping districts are shifting, leaving the older obsolete store buildings behind; consequently providing blighted areas and new problems for the city. The owners of land in established commercial districts seek to stabilize their values and the city government is likewise anxious to prevent the unwarranted shifting of business centers. The provision of adequate off-street parking in conjunction with present establishments would be an important stabilizing factor.

We must not overlook the need for adequate mass transportation. In spite of the increased use of the private car, a satisfactory mass transportation system would at once minimize the need for everyone approaching the downtown area to drive his car, and would consequently relieve the downtown district of at least a portion of the parking problem.

In conclusion, it must be emphasized that in order for our communities to meet this outstanding problem, three things are necessary: (1) a general and sympathetic understanding of the problem; (2) an imaginative district-wide plan of adequate parking areas related to needs; and (3) the acceptance of responsibilities for the provision of these areas.

KANSAS CITY CENTERS PUBLIC RELATIONS IN NEW DEPARTMENT

Kansas City, Mo., has established a new department of research and information to serve as a municipal reference library, centralize all research activities of the city, and handle public relations and informational activities.

First undertaking of the librarian and her assistant was to begin cataloging existing reference material of a basic and specialized character from material scattered throughout the city and, at present, of limited usefulness because it was not known to exist and could not be located when needed.

When completed, the catalogue will make this reference material readily available to all officials and citizens. In addition to assembling and filing existing materials the library, aware of research needs of departments, will endeavor to sort data currently collecting in the various departments.

Centering of all municipal research activities in one department will place research procedures and activities on a more uniform basis and prevent overlapping of research by various departments.

Two employes now handle public relations and information services of the city, one operating the information desk in the main lobby of the city hall, the other acquainting citizens—especially new citizens — with the functioning of their government. Slides, movies and recordings are used in explaining city governmental operations.

Plans call for the department of research and information to prepare both the city's annual report and reports of the various departments, to standardize publications and relate their content. — *Public Adm. Clearing House.*

Preparing for Post-War Traffic on Existing Streets

by GEORGE J. FISHER, ASSOC., I.T.E.
Assistant Traffic Engineer, State Highway Department, Columbus, O.

MUCH has been discussed and written about the Highway Act of 1944 and how it will affect the traffic flow around and in urban areas. Superhighway systems are being planned for our larger cities with adequate distributors, separated intersections and limited access control with service roads. Safer and easier access between residential and business areas and for the motorists who desire to pass through the city to destinations beyond will thus be provided. Coupled with the plans for the expressways are also plans, in many of the larger and more progressive cities, for elaborate terminal facilities to provide a haven for those wishing to transact business in the central commercial area. But what about all the streets that will not be improved — that will still carry heavy burdens of vehicular traffic and will continue to be important in the overall transportation system of the city?

Should there not be some planning right now for getting these in shape to handle the increased traffic volumes that they will be required to carry? The money to be allocated by the Federal government will not be sufficient to do everything that should be done to all the streets of the city. Neither will the city itself have enough money for this. However, the city can plan to get them in as good a shape as possible so that traffic accidents will be kept to a minimum and congestion will cause as little delay as possible.

Plan Now

What can the city fathers do and what should be planned so that when Japan is whipped, gasoline is no longer rationed, and tires and automobiles are available, the motorists can use the streets safely and expeditiously? It is a certainty that authorities of many cities cannot continue to assume the complacent attitude that their city is having no traffic problems now and will not have any later. Neither can they assume that employment will remain forever critically inadequate as it is now. Some of these days, plenty, if not too much, help will be available to do what has to be done. It is far better to have sufficient work planned and ready for scheduling when and if such a surplus of labor becomes available than to have to resort to bread lines to take care of people who cannot work for the city because no work has been planned and provided for in the budget.

The first thing that can be done and done immediately as a preparatory measure, is to check over the existing city traffic ordinances and, if necessary, revise them to conform to the necessities of modern traffic. The Model Traffic Ordinances, published by the National Conference on Street and Highway Safety, are being reviewed and will be available soon, revised for current requirements. In the interest of the motorist, so that he may have standard traffic rules and regulations by which to drive, it should be of prime importance to every city official that ordinances be standard and not antiquated.

And while the traffic ordinances are being redrafted, provision should be made to include the establishment of

Traffic Engineering as a part of the city government. Cities over 250,000 should have a separate official whose duties and responsibilities cover the provision for and control of vehicular traffic in the city. For cities under 250,000, these duties and responsibilities can be delegated to either a traffic engineering division of the city engineer's department, to a specially trained assistant of the city engineer, or, in the smaller cities of 25,000 and below, be made a part of the city engineer's duties. The point is they should be delegated and should be sanctioned by law.

Accident Reports

The next most important job that can be investigated and delegated by ordinance is the overhauling or polishing up of the traffic accident reporting system.

1. Are report forms adequate?
2. Is there a location file set up so the traffic engineer can determine where the unsafe places are on the street system and what is happening there? Only by such information can he devise remedies and reduce injuries and property losses resulting from traffic accidents.
3. Are there accident spot maps available to enable the police department to quickly locate these dangerous points and assign patrolmen to watch them, and to assist the traffic engineer in devising ways to permanently eliminate the bad points?
4. Is there a driver file in existence where drivers' records can be checked? Can one tell readily the number of accidents a driver has had and recommend re-examination or revocation of his right to drive in order to protect other motorists?
5. Does the police department have an arrest or conviction spot map to aid them in selective enforcement with relation to traffic accidents?

If the system does not include these implements and knowledge of their use, so necessary for the safety of the automobile drivers using the street network, procedures should be set up and responsibility for their maintenance delegated now and not after the heavy post-war traffic volume hits the thoroughfares. If the traffic accident reporting system is made to function smoothly now, the job later will be much easier and more effective.

Gather Traffic Facts

Together with the preparation of a modern accident record system, plans should be made for the traffic engineer to collect traffic facts throughout the city in order that improvements can be justified on a sound basis and in order for proper remedial measures to be effected for locations of high accident frequency. Studies of traffic volumes, speeds, delays and origin and destination, are some of the fact-finding programs that are most necessary in any coordinated program of city-wide traffic improvements.

The third consideration for the legislative and executive officials is the provision for examination of residents who wish to drive automobiles on the city streets. Should the state in which their city is located have an adequate driver's licensing law which is well administered, the problem is not so urgent. If not, the necessary legislation should be enacted immediately and machinery set in motion to provide the necessary equipment and trained examiners. By such action, the bad drivers can be weeded out before they jeopardize themselves and others. Those who repeatedly disregard traffic regulations and those who have a number of accidents, in which they are at fault, can be re-examined and, if necessary, be removed from the ranks of the driving public.

(*Continued on page* 471)

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The Commercial Vehicle and Police - In Traffic Safety

by CAPT. THOMAS N. BOATE
Director, Special Service Division, National Conservation Bureau

Editor's Note. — This is an address given by Capt. Boate before the Greater N. Y. Safety Council, March 8, 1945.

IN ADDRESSING the commercial vehicle section of the Greater New York Safety Council on the occasion of this monthly luncheon meeting, I should like to do so, not with the feeling that this is a formal address on a subject of only academic importance, but rather that the meeting is in the nature of a conference between persons who make their chosen vocation that of preventing highway traffic accidents. Those of us whose success or failure rests upon the achievement of maintaining a high degree of safety in the operation of large fleets of motor vehicles carry a tremendous responsibility. We cannot approach problems entailed in highway traffic safety in any other but a most serious vein.

I would like to say at the outset, no one aside from individual companies can, to date, lay claim to any appreciable degree of success in the field of highway traffic accident prevention. This is a rather broad statement. It is not meant to imply that there has been a lack of meritorious service in this field over the past 25 or 30 years. In fact, it might be said a trojan job has been done by all concerned. Certainly, national, regional and state safety councils and other like organizations have done a very commendable job in promoting the factor of safety on streets and highways. State and city police have likewise come a long way along these lines. Federal governmental agencies, particularly during the war, have contributed in a great measure; but the job is really only getting underway. Postwar traffic density, if the future can be judged at all by the past, will present a tremendous problem in traffic control and accident prevention.

Death Toll to Double?

National experts predict that beginning with the lifting of restrictions upon the free usage of motor vehicles, at the end of 15 years postwar, we will be confronted with street and highway traffic that will probably be double that experienced before the war. If this is an accurate prediction or, if it is only 25 per cent accurate, we may expect that traffic accidents, traffic accident fatalities, personal injuries and economic losses will, as has always been the case, follow traffic trends. We conclude, then, that if motor vehicles double in number, 15 years postwar, this nation will kill at least 80,000 persons per year and double the number of persons injured as well as the economic loss.

This is the problem, gentlemen, aggravated by a backlog of experience in which the annual traffic toll of life lost, prior to the war, was about 40,000 lives; and two and a half million injured annually. All of which, from a social welfare point of view, had probably brought us to a point where we, as a nation, could not very well afford to see an increase.

Interesting Comparisons

Just what is our responsibility, as fleet safety supervisors and exponents of highway traffic safety in one capacity or another, in this matter of traffic control and highway accident

prevention? First, let us draw one or two comparisons.

In the matter of the commission of crime and crime repression, as compared with traffic control and accident prevention, let us suppose that while we are meeting here a million dollar robbery takes place in the City of New York. The police department would immediately be alerted. All necessary personnel would be turned out to apprehend the criminals. In all probability one or more policemen would lose his life in an effort to recover the stolen property and apprehend those responsible for commission of the crime. Suppose also that somewhere in this nation we were to experience a riot involving the loss of life in proportions comparable to the population of the City of Trenton, something entirely unheard of heretofore. Public reaction to this sort of thing would be tremendous. We would probably, as a result of an inflamed public opinion, run the whole gamut of congressional, legislative and police investigations. Yet, during the year 1944, on the traffic accident side of the picture, 23,800 persons were killed, 850,000 injured and 70,000 permanently disabled. 12,700 of the number killed were war workers, a wage loss of 700 million dollars was experienced and this nation already burdened with an unprecedented national debt suffered an economic loss of 1,250,000,000 dollars. Notwithstanding this horrible experience, no one seems to be excited. The facts were only briefly referred to, if referred to at all, by the press.

Federal Intervention Possible

The first factor, having real important significance, is the indication of the future we may draw as to the postwar traffic situation. If we double the loss of life and property or even permit it to increase 10 to 25 per cent, we may expect an aroused public opinion. If we experience an aroused public opinion the situation will undoubtedly develop into a political issue. Once the street and highway traffic accident situation becomes a political issue, government administration officials, federal, state and local, will immediately begin to take notice. Tighter restrictions, as is usually the case, will be placed into effect almost overnight. The spirit of cooperation, in considering the views of industry in this matter, which we now enjoy, will not be as welcome as they were under the former passive public attitude. Outside views of a non-official origin are almost always ignored under these circumstances. Conditons on streets and highways may well become so bad as to warrant federal intervention and subsequent federal control on the ground that street and highway traffic represents commerce of an interstate character.

This is not a very bright picture. We know, full well, from wartime experience that any infringement on the rights of states to regulate street and highway traffic is highly undesirable.

What, then, can we do about the current and postwar traffic accident problem? First of all, we must change our thinking. We must look at the problem from a far more serious point of view than has been the case in the past. We, as representatives of industry, representing a great portion of this nation's population must insist upon procurement and retention of able administrators to administer traffic control and accident prevention by state and city levels of government. We, as representatives of the public, should frown upon the injection of political considerations in this phase of governmental administration.

Need for Wise Administration

We should undertake to inspire a wise administration of the regulation

of speed upon streets and highways. The modern trend in the regulation of speed fixes two factors as being of primary importance. These are, human limitations and highway limitations. It is suggested, by those holding this view, that state laws in the matter of speed should recognize that somewhere in the realm of speed there is a limit beyond which human beings cannot go with safety. This limit on the most ideal type of superhighway, for example the Pennsylvania Turnpike, which embodies all of the modern safety features of highway engineering, is about 60 miles per hour for the average automobile driver. If this is near to the truth, the modern top speed limit should be not more than 60 miles per hour, regulated by absolute statutory requirement as the limit for modern multiple lane highways with provisions for downward zoning consistent with highway construction and conditions of terrain peculiar to each state. I lean toward this view. In any event, it is certainly part of our responsibility to present a united front against an increase in speed limits during the postwar era.

Conflict of laws and regulations between states and cities has been a constant source of irritation to the motoring public for years. This irritation too often breeds antagonism towards accident prevention progress. It is high time that the states, if not nationally, at least by regions, undertake to unify basic laws regulating traffic, in the interest of accident prevention. We can do much toward the achievement of this goal by cooperating with federal and state administrators in promoting adoption of the national uniform traffic code.

Control of Pedestrians

Pedestrian participation in traffic accidents is almost universally 50 per cent of the problem, yet many state and city jurisdictions have no legal regulations by which existing conflicts between vehicle and pedestrian traffic may be adequately controlled and accidents prevented.

Law enforcement plays an important role in highway traffic accident prevention. However, police forces are traditionally under-staffed, under-trained and under-paid. We need to support a move toward the organization of police forces, in adequate numbers as to personnel, properly trained and otherwise better prepared to do the job.

There is a need for a much keener appreciation of the responsibilities of police in the field of traffic control.

Police Should Plan

Police administration in this nation should be conducting extensive planning for postwar traffic control. Plans should be developed by which police on leave of absence in military service may be quickly reinducted, retrained and placed into service to meet the increased traffic situation. Likewise, plans should be formed in advance for the early acquisition of necessary units of transportation and the recruitment and training of new members to the force in numbers consistent with increased traffic duties on conclusion of the war.

Public Support Needed

In conclusion, then, it might be said that our objectives involve the achievement of a broader public support for the enforcement of traffic laws and regulations which means the kind of support that will irrevocably move the public to rid our streets and highways of the automobile driver who occasionally becomes intoxicated while thus engaged. Of the kind of person who has demonstrated himself to be socially irresponsible in the operation of a motor vehicle by virtue of accident participation and/or traffic law convictions. This, in short, means the public will have expressed the feeling of being sick and tired of a

situation wherein there is constant fear children at play or sent here and there on an errand may be killed by an automobile driver. When this kind of thinking is aroused we will have the necessary high degree of safety upon our streets and highways because, it will then have become an issue of political significance and we will find all levels of government not only searching for but retaining, once secured, able and experienced persons to administer traffic control and accident prevention.

Familiarity with and obedience to traffic laws is particularly important to those of you who are engaged in an interstate operation.

Fleet operators have probably done the most outstanding highway safety job accomplished during the past decade. They have done this because it has been found to be good business to avoid accidents. It has often been said, regardless of how efficient the business administration part of your organization may be, a high accident participation record in any one year can easily be the deciding factor between profit and loss. Hold to this point of view. Emphasize to your people the need of safe driving through compliance with traffic laws and regulations at all times. Only by this formula may we lay claim to having contributed our full share to the solution of this very serious problem.

TRAFFIC DEATHS DECREASE DURING EARLY '45

Traffic deaths went up two per cent in May, but were down three per cent for the first five months of the year. Travel in the first four months of the year was up six per cent.

That is the traffic picture for America—1945 against 1944—as reported by the National Safety Council.

The Council pointed out during the summer vacation months, with more gas available, there is good reason to expect the death toll to climb unless every driver and every pedestrian uses extra care to meet the extra hazards.

The May traffic death toll was 1,760, against 1,730 for the same month last year. The five-month toll this year was 9,240, against 9,540 for the same period a year ago. Thus, the death toll seems to be following closely last year's pattern except for the first two months. The January and February death totals in 1944 were abnormally high.

Available data on pedestrian deaths indicate that there were 2,520 pedestrian deaths during the first quarter of the year. This, too, parallels the pattern for last year.

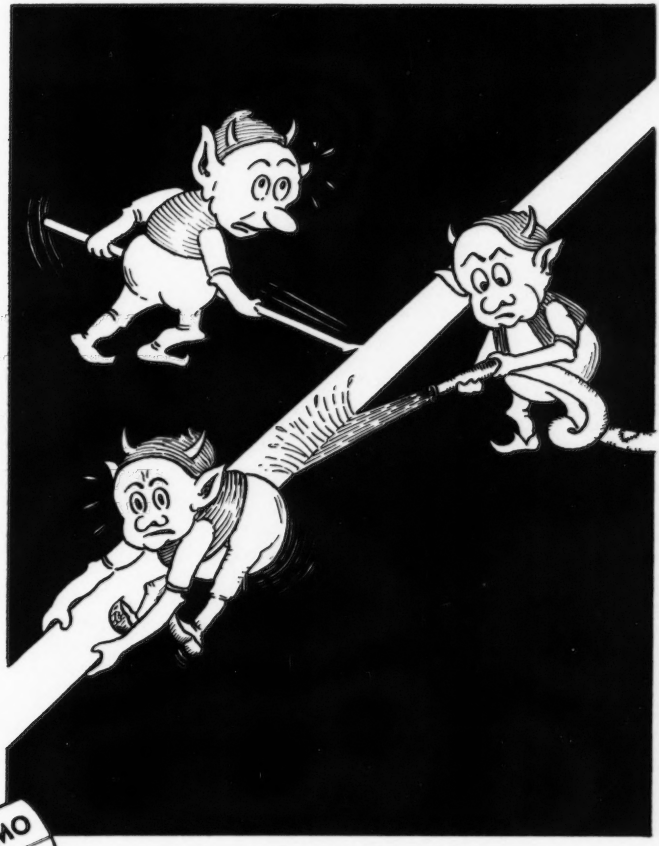
Seventeen of 40 reporting states cut their traffic death toll in May; 19 had increases and four had no change from May 1944. For the five-month period in 1945, compared with 1944, 21 states reported decreases, 17 reported increases and two reported no change.

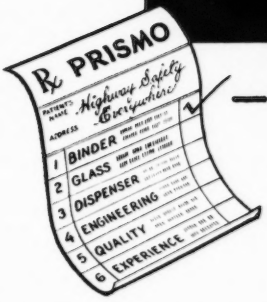
★ ★ ★

SOUTH AMERICANS TURN TO RIGHT-HAND DRIVING

The uniformity of right-hand driving will soon be complete throughout the Americas. Paraquayan drivers changed from the left to the right side of the road at midnight on February 24, 1945, and Argentina prepared to make the shift on June 10. In Uruguay, the last remaining country in which left-hand driving has been the rule, the Department of Montevideo fixed July 1 as the date for the change, and it is expected that the other departments will soon follow suit.—*Bulletin of the Pan American Union.*

PRISMO "LIFELINE"





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MAJOR ECONOMIC FUNCTIONS ESTABLISHED AS BASE FOR INTERCITY COMPARISONS

One third of 1,072 cities of more than 10,000 population in the United States are suburbs.

Twenty-five per cent of the communities are manufacturing cities.

And one of every six of the cities is a "dormitory" city, with most of its residents working elsewhere.

This is revealed in a study of major economic functions of cities, by the International City Managers Association. The study was made to increase the validity of intercity comparisons of operating statistics and services through comparisons of cities of similar characteristics.

Municipal problems vary from city to city because of different economic characteristics, and the validity of comparisons may be enhanced when they are based on such economic and social factors as population, economic base, rent levels, relation between number of people who work in the city and the number who live there, whether the city is an independent city (cities not in metropolitan districts), a central city in a metropolitan district, a suburb, etc., the association said.

Three Major Factors

The three major factors considered in classifying cities were employment, occupations and residence. On this basis, cities were broken down into 11 types. Under "employment" cities, the following types were listed:

1. Manufacturing: 50 per cent or more of labor force employed in manufacturing, trade and service establishments; employment in retail trade less than 30 per cent of the whole. Typical city—Thomasville, N. C., with manufacturing percentage of 89 per cent, trade ratio of less than 10 per cent, service occupation ration of two per cent. One fourth of all cities over 10,000 population are in this class.

2. Industrial: dominance of more than 30 per cent; 89 cities over 10,000 population are in this class, with only seven of more than 100,000 population: Erie, Grand Rapids, Kansas City, Mo., Knoxville, Reading, Utica and Youngstown.

3. Wholesale trade: employment in wholesale trade totals at least 25 per cent of aggregate employment in manufacturing, trade and service. No city over 50,000 population in this group. The 13 cities over 10,000 so classified: Anaheim, El Centro, Fullerton, Redlands, Riverside and Salinas, Calif.; Greenville, Rocky Mount and Wilson, N. C.; Fargo, N. D., Danville and Suffolk, Va.; and Wenatchee, Wash.

4. Retail trade: number employed in retail trade greater than employment in any other category and employment in manufacturing less than 20 per cent. Only five cities over 100,000 in this class: San Antonio, Oklahoma City, Salt Lake City, Tulsa and Wichita. Typical of 125 smaller cities in this group are trade centers for agricultural regions such as Ponca City, Okla.; or for suburban dwellers, Belmont, Mass.

5. Diversified: Two types—in one employment in manufacturing predominant but less than 50 per cent of total, and retail trade second in importance; in the other retail trade predominant and employment in manufacturing between 20 and 50 per cent of aggregate employment. In first group are 22 cities over 100,000, ranging down from New York and Chicago to Fort Wayne, Ind., Hartford, Conn., and Tacoma, Wash.

"Occupation" Types

Five types of communities are classi-

fied under the general heading of "occupation." The types are:

1. Education center: total enrollment of schools of collegiate rank equals 20 per cent or more of city's population. University towns generally are small and single in function, such as Ames, Ia., Ann Arbor, Mich., and Columbia, Mo. Even such a large university as Harvard is only small part of economy of Cambridge.

2. Government center: where 15 per cent or more of labor force employed by government. Most of the 19 cities so classified are state capitals, and only four—Washington, D. C., Norfolk, Sacramento and San Diego—have 100,000 or more population.

3. Mining: where 15 per cent or more of resident-labor force in mining. None of the 29 mining cities is over 100,000 in population.

4. Transportation center: where 25 per cent or more of population report transportation as occupation. Only 12 cities where this occupation clearly dominates city economy: Altoona and Galveston (in the 50-100,000 class), Council Bluffs, Ashtabula, Brainard, Minn., Cheyenne, Connellsville, Pa., Hornell, N. Y., North Platte, Nebr., Parsons, Kan., and Pocatello, Idaho.

5. Amusement or health resort: manufacturing employment ratio less than 15 per cent, and where more than 10 per cent of residents employed in eating and drinking places, hotels and lodging places, and amusement, recreation and related services. The study lists 20 such places, with only Miami having population of more than 100,000. Some cities commonly identified as summer resort cities—including Albuquerque, Colorado Springs and Asheville—are classified as retail centers by the study.

Employment-Residence

The third city classification — the employment residence city—lists only one type of community, the "dormitory" type, where less than 40 per cent of the residents work in the city. A dormitory city is not necessarily without industry, however; for example, Maywood, Ill., a Chicago suburb, has an employment - residence ratio of only 21 per cent but a manufacturing ratio of 49 per cent. Three cities of more than 100,000 population are listed as dormitory cities—Long Beach, Calif., Somerville, Mass., and Yonkers, N. Y. Some 163 cities between 10,000 and 100,000 population are dormitory cities. —*Public Administration Clearing House.*

NO SAFETY CONGRESS IN 1945

The National Safety Congress — world's largest safety event—will not be held this year.

The National Safety Council has informed the Office of Defense Transportation that no application will be made for permission to hold the 1945 Congress, in view of the need for using all available transportation facilities to move men and material to the Pacific.

The Congress normally is held in October and is attended by 10,000 safety leaders from all parts of America and from foreign countries. It was held in Chicago last year.

Ned H. Dearborn, president of the Council, wrote to Col. J. Monroe Johnson, director of ODT, "we recognize the absolute necessity for conserving our transportation facilities for immediate and specific war uses.

"The Council will continue to use every practicable means for carrying out the assignment it received from the President of the United States at the start of the war—to lead a united campaign against accidents that waste manpower, material and time needed to speed final victory."

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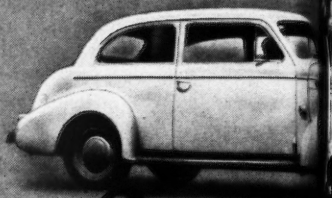

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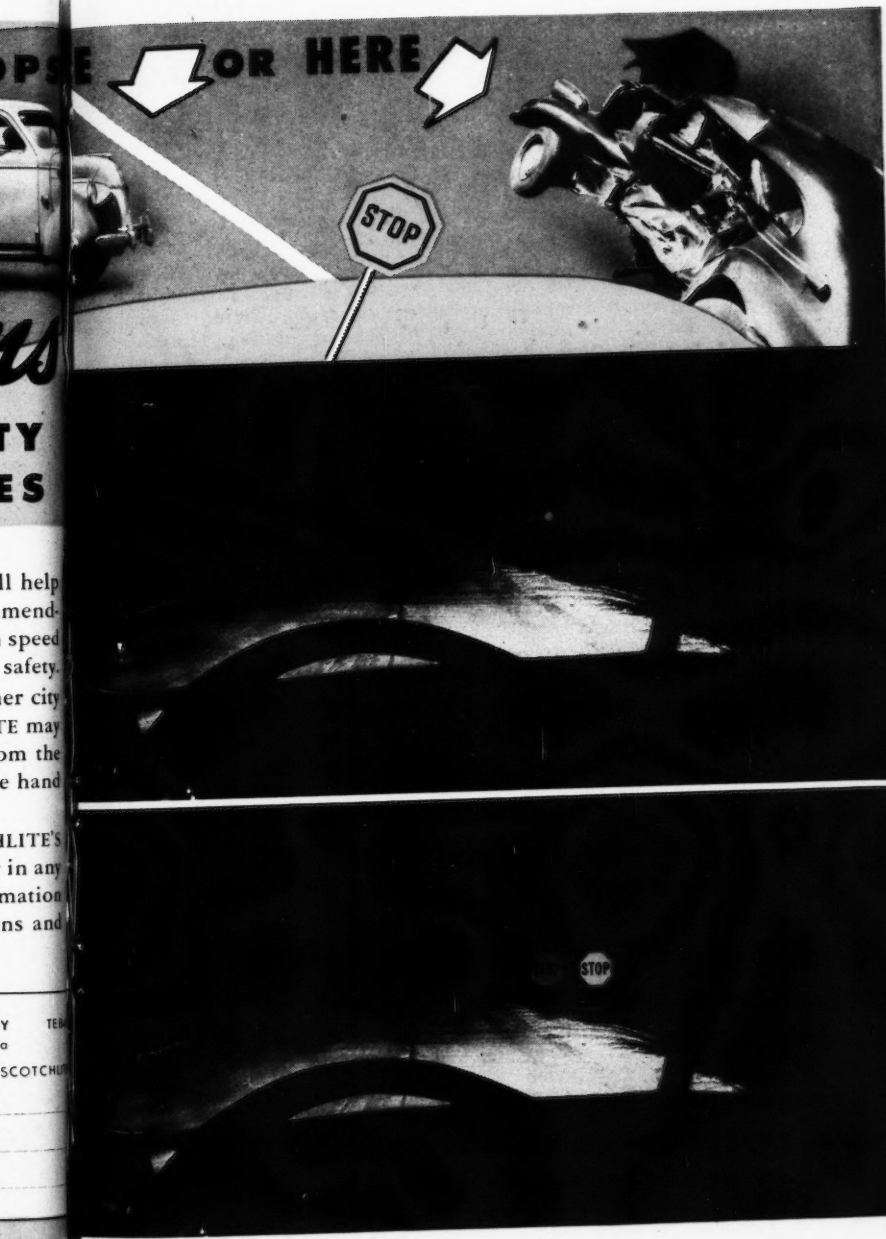

OR HERE
STOP
STOP

Capacity Providing Divisional Fins

by OTTO K. JELINEK, MEMBER, I. T. E.
Traffic Engineer, Chicago Park District

The location of Lincoln Park on the sloping shoreline of Lake Michigan places it directly on the north-south axis of the Central Business District of Chicago. Forty per cent of the entire private passenger automobile traffic entering this district comes from the north and uses Lincoln Park facilities.

During the past twenty years the center of origin of this traffic has moved from the territory immediately west of Lincoln Park to the territory north and northwest. This shift in origin was due to population shifts and to the general let-down in mass transportation facilities, but principally to the development of the automobile.

Due to the absence of suitable traffic facilities on the city roadways, the majority of vehicular traffic used the north Outer Drive Boulevard System to obtain better running time and a higher degree of safety. But as the vehicular volumes through the Park increased, many traffic problems arose that had to be solved such as the heavy one-way directional traffic during the morning and evening rush hours, the lack of concentrated and distributional parking facilities, the poor efficiency of flow, the poor distribution of volumes, the high accident rate, the large number of cross-interferences (9 major, 3 minor), the lack of segregation of through and local traffic, the lack of channelization at key points, the dangers to pedestrians crossing the drives, excessive running time, and the unfavorable public reactions to the above items.

Revision of Traffic Operations

In 1935, a general revision of traffic operations in Lincoln Park was inaugurated that provided the needed capacity for directional traffic by means of special routings during the rush hours and also obtained a balanced distribution of traffic during normal hours by one-way routing. This revision practically eliminated all cross-interferences, established a partial segregation of vehicles, provided channelization where required, reduced pedestrian dangers, reduced accidents approximately 30%, reduced running time through the park by six minutes, and restored the pleasure of driving in the Park area.

The principles so successfully demonstrated by these trial operations were used as a basis for planning the recently completed construction program of modernizing the areas and drives in Lincoln Park.

The former Park area, cut up by the many winding drives into small areas of little recreational use, is a thing of the past. Every available space is now made usable by the elimination of many of the drives that formerly traversed these areas. At the same time, the new roadways provided are so planned and constructed that two types of drives are obtained; one type for the through traffic motorist whose main interest is a convenient and ready passage through the Park, and the other type for the pleasure and recreational seeker whose main interest is in the Park's many recreational facilities and attractions.

The new local drive is a combination of old winding Stockton Drive with carefully planned revisions. It has connections to the old Lake Shore Drive at various locations and is hooked up to the new Express Drive

A view of the divisional fin on the Chicago Outer Drive. Photo by Chicago Park District.

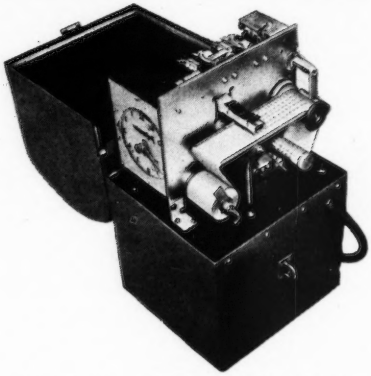
by means of strategically located grade separations at North Avenue, Fullerton and Belmont Drives. The local drive is also provided with curves, turns, and special intersectional treatment at certain access points to discourage through traffic usage. Parking areas are available at close proximity to the drive, as well as along both sides of the roadway, thus providing both the concentrated and distributional types of parking.

The new express drive utilizes the greater part of the area formerly traversed by Beach Drive, and runs parallel and close to the shore of Lake Michigan. The roadway is 100 feet wide, of a nearly straight alignment with no curves less than a radius of 4,000 feet, and with all access and egress points at grade separations. The drive is composed of eight wide traffic lanes that may be divided into four separate roadways of two lanes each, by means of capacity providing divisional fins. Pedestrian traffic is provided with both overhead and underpass means of crossing at required locations, and is protected by pedestrian fencing at other locations of high pedestrian activity. Many other standard as well as new innovations in traffic control are also provided, which make this new through traffic artery the safest and most efficient type of highway now known to traffic engineers.

Utilization of Divisional Fin

Of the new innovations included, the capacity providing divisional fin is worthy of especial note. Without the use of this remarkable invention, a roadway of 170 foot width would have been necessary to accommodate the known traffic volume. But with its use, a roadway of 100 foot width was constructed which amply provides for the heavy traffic volumes carried. The result in savings is tremendous, considering what the estimated costs would have been had the 170 foot wide roadway been constructed. Such items as the increased right-of-way, paving, more extensive overpasses, bridges, light maintenance, cleaning, etc., would have made the cost of construction almost prohibitive; yet, the added cost of the raising capacity providing fins was barely one-half of this cost by comparison.

The capacity providing divisional fins erected on the through drive 2.2 miles long on the right-of-way between Lake Michigan and the Lincoln



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The Trafficounter is twice as fast as any other counter of motor traffic; essentially an electric counter which records the over-lapping cars as they cross the detector. It assures accuracy, is on the job 24 hours a day, and will save many man hours. **Streeter-Amet Company**, 1726 Belle Plaine Avenue, Chicago 13, Illinois.

STREETER-AMET

Park Lagoon, consist of three parallel lines of fins running longitudinally in the roadway and arranged so that by the raising and lowering of each parallel row, the roadway may be separated into many combinations, according to traffic requirements.

Each line of fin consists of a series of movable units, each unit of which is made up of a structural steel box approximately twenty inches wide, sixteen inches deep, and twenty-five feet long. This is placed in a trench so that in the lowered position its top is flush with the adjacent roadway surface. By means of hydraulic jacks, these fins are raised eight inches above the roadway surface, thus producing a continuous barrier between the traffic lanes. Since the jacks are of the double acting type, the fins may be raised or lowered as desired.

In operating this system, the raised position of the fin is made to vary with the density and direction of traffic during certain periods of the day. In the morning rush hours, when the traffic is directional to the Central Business District, the east line of fins is raised, thereby separating the roadway into six lanes for southbound traffic and two lanes for northbound traffic. In the evening rush period, when the prevailing traffic is directional away from the Central Business District, the west line of fins is raised, thereby separating the roadway into six lanes for northbound traffic and two lanes for southbound traffic. Before and after the morning and evening rush periods, termed the normal period due to the even balance of flows, the center line of fins is raised to separate the roadway into equal parts. The raising and lowering of the fins is controlled by the operation of switches from the control boxes located at the two extremities of the system.

Each parallel line of fins is broken down into divisions, each division being provided with sump tanks, a pumping station, and the hydraulic piping to the jacks for the fins in its division. Each division is also connected to the adjacent division by a system of electrical controls, similar in principle to a progressively operated stop-and-go light system for continuity of control and operation. All fin units in each division raise simultaneously in approximately 30 seconds.

Wave-Like Movement

To raise a complete line of fins, the division nearest to the control station is first elevated. When this division has reached a predetermined height, the second division is automatically started by the opening of a valve controlled by electrical mechanism operated in the pump house. Successive operations of the following divisions are started in a like manner, making the entire operation a wave-like movement. The traveling time of this wave is approximately twenty miles per hour.

The box used for the fin is made of one-half inch structural steel, the top side being equipped with bull's eye lenses lighted at night for visibility in the raised position. The wearing surface is of white concrete, three and one-half inches thick, reinforced with mesh.

The Chicago Park District Commissioners, in adopting and going through with these plans, did so through the progressive leadership of its President, Mr. R. J. Dunham, and under the engineering genius of its Chief Engineer, Mr. Ralph H. Burke, and finally the dynamic ability of Mr. James P. Gallagher, the Principal Construction Engineer. It is with gratitude that the traffic engineers of the Park District, as well as of the entire profession, look

to the above men in carrying out its ideas and designs.

The capacity providing divisional fin is the result of ten years of study, testing, and experiment, both as to the principles of operation and as to the mechanical device itself. The accompanying photographs show various views of the actual field construction.

Tremendous Savings Possible

The principal use of this device will probably be on avenues having restricted rights-of-way which carry heavy alternating directional traffic, such as prevails in practically all large cities having principal avenues leading to and from their central business districts. Mr. Hal Foust in the Chicago Tribune on December 24, 1939, quoted the following extract in an article captioned "Disappearing Center Curb to Cut Super-Highway Costs." "The Chicago Park District is advertising for bids for the construction of a novel center curb appearing and disappearing with the press of a button, which might cut $25,000,000 or more from the cost of comprehensive super-highway program for Chicago sponsored by Major Edward J. Kelly, at an estimated cost of $205,000,000. Its employment throughout the system would minimize the amount of land and buildings that must be condemned for right-of-way." We have not checked the accuracy of this quotation, but we do know that tremendous savings are possible in right-of-way costs, structure and pavement costs, and in general, maintenance costs such as repair, lighting, snow removal, traffic control, etc.

This type of fin may be used on surface as well as on elevated or depressed types of super-highways. Various possible treatments have been worked out to allow turn movements on surface routes that serve to reduce and simplify the total number of interferences possible under present day turning methods. In view of this, it has a potential use when the horse-and-buggy street patterns of the cities are simplified to a new practical automotive usage.

★ ★ ★

INSTITUTE ACTIVITIES 10 YEARS AGO

Taken from Traffic Engineering, August 1935

"At the Cleveland meeting of the INSTITUTE last October," writes Peter Stupka (Mem.), "I collected about a half-dozen 'informal' papers, releases, etc., from members who were not on the scheduled program, dealing with problems of special interest to them, or covering the solution of some local problem, and reports on local traffic situations and accident problems. I am confident that many members who attend the annual meeting bring copies of material of this kind. I would suggest that the I.T.E. membership be invited to bring or send 75 or 100 copies of material of this nature for general distribution to all persons attending the annual meeting. The material might include reports of special research, engineering solutions of specific problems, analyses of annual accident reports, etc."

★ ★ ★

THE COST OF POOR STREET LIGHTING

Half of the nation's traffic fatalities occur on 10 per cent of the city streets—the main thoroughfares. Illuminating engineers state that most of these streets urgently need lighting modernization. It has been estimated that filling this critical need would save 3,000 night fatalities yearly, 100,000 personal injuries, and 450,000 cases of property damage—all amounting to $125,000,000 in economic loss.—*Street and Traffic Safety*

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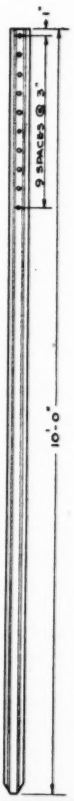

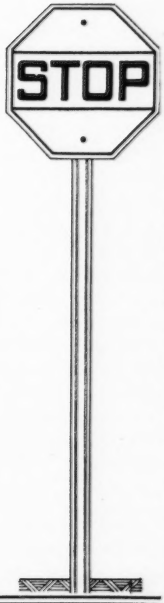

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ITE NEWS AND PERSONALS

Washington Section Holds Social Event

On Saturday, July 21, the Washington Section enjoyed an outing as the guests of M. O. Eldridge at his wooded summer home in Virginia. This was the group's only purely social meeting of the year, the program consisting of sports followed by a delicious buffet supper on the porch. The highlight of the outdoor contests was a "semi-finals" horseshoe pitching battle between Jack Ecker and Harold Hammond. The latter finally won by the close score of 22 to 20, thanks to a rare performance of refereeing by Burton Marsh. A game of cards was the chief attraction in the evening.

Members and guests present follow: Earl Allgaier, E. A. Barton, W. F. Boardman, W. L. Braun, J. B. Ecker, M. O. Eldridge, W. G. Eliot, vice president; H. F. Hammond, E. H. Holmes, R. S. Holmes, D. W. Loutzenheiser, B. W. Marsh, D. G. Mickle, J. H. Mitton, O. K. Normann, C. W. Prisk, P. L. Ristroph, C. G. Stoneburner, president; M. C. Stark, sec'y-treasurer; W. B. Hampton, J. H. Stone, J. G. Trapnell.

PERSONALS

Russell Harrison (Assoc.), our overseas correspondent, Ross T. Shoaf, reports, was commended for his highly valuable contribution to the successful military operations in Normandy. The letter of commendation follows:

HQ. 12TH MAJOR PORT
Normandy Base Section
Com. Z, ETOUSA
14, June 1945

TO: Chief of Transportation, Com Z, ETO, APO 887

THRU: Commanding General, Normandy Base Section, APO 562

1. It is desired to commend the services of Mr. Russell N. Harrison, Highway Traffic Engineer, on duty under contract in civilian status with the War Department, and subject to assignment by the Chief of Transportation in this Theater of Operations.

2. Mr. Harrison was assigned to the Red Horse Staging Area, which was subsequently known as District "A", Channel Base Section and as Northern District, Normandy Base Section, during the period from about 1 January-31 May, 1945. During much of this period of time, the maintenance of the road net in areas congested by hundreds of thousands of troops, continuously flowing in and out, was a matter of great importance and concern. Deep snow in January and mud during February and March necessitated continuous change in one-way road nets, to permit movement of supplies and their equipment, by organic transportation as well as by some thirty QM truck companies. To the success of the entire operation, a highly valuable contribution was made by Mr. Harrison in his capacity of Highway Traffic Engineer.

(Signed)
JOSEPH L. PHILLIPS
Brigadier General, U. S. Army
Formerly Comdg. Northern District.

Light B. Yost (Affil.) has been promoted to the rank of colonel. Attached to the Transportation Branch, Headquarters, 7th Army, with address A.P.O. 758, New York, he is on leave from the Department of Public Relations, General Motors Corporation.

Ross Shoaf (Assoc.), Highway Traffic Engineer, with the Office of Chief of Transportation, Paris, writes to Wilbur Smith at I.T.E. Headquarters as follows:

Just read your letter of 6 June — many thanks—it's great to have your friends keep you up to date while being over here so far from the problems closest to your heart.

This letter should serve somewhat as a

joint letter from all the boys over here who have been so tied up with detail that it is difficult for them to write. Several of them have asked me to do the dirty work since, being in headquarters, I have a better chance of keeping in touch with all the men.

Actually, with the war in Europe over, our work took a sudden increase. In essence, what it has amounted to is that we came into a system of transportation already set up to move troops and supplies forward. There were many details which we all pitched into to help improve the flow of traffic but it was not practical to make too many broad scale changes in a system which was working, although perhaps not always working as we might prefer. However, with the war over and redeployment forcing a reversal of flow, the highways needed to be completely reorganized. Thus, for the first time our men are having an opportunity to get in on the original planning phases. They are meeting the occasion too.

I have just returned from three weeks in Marseille giving Paul Robinette a hand with his circulation and signing problems in connection with three tremendous staging areas and port operations. He has been down there since he arrived in the ETO and knows the country like a book. Wes Bellis, who has been in an advance section, is now on his way down to continue the help for Paul. J. P. Murphy and Russ Harrison are working over the staging areas in and around Le Havre. Harland Perdew and Tom Walbert cover the Belgium territory. Tony Carrothers, Hal Frier and Ralph Gross are reorganizing the roadways for the assembly areas surrounding Rheims. Neal McCandliss has Paris and its environs for some miles around now that Dick Wilcox has gone up into Germany. (I haven't talked to Dick since he left.) Jim Hayden, who has been working the truck companies over in an advance section to get efficient operating methods, has indicated his willingness to go to the Pacific Theater. Jim Shluster is working up in Germany starting the men back home while Dick Wilson is holding down the office end of traffic engineering for the Theater Provost Marshal in Paris. I, too, am in Paris, with the Chief of Transportation Headquarters, giving a hand where the boys in the field need it, but function mainly by keeping each informed of what the others are doing so that they can coordinate their work. This I must say—of all the various groups in this theater, none has worked more as a unit—although being hundreds of miles apart—than have our fifteen civilian traffic engineers.

A General Picture

I started to tell of the work of each man in detail, but realizing the letter would be too long, decided to answer your question with a general picture. First, to fully appreciate the problem, you must realize that there are three considerations we always have to keep in mind because they have important bearings on how we approach our work.

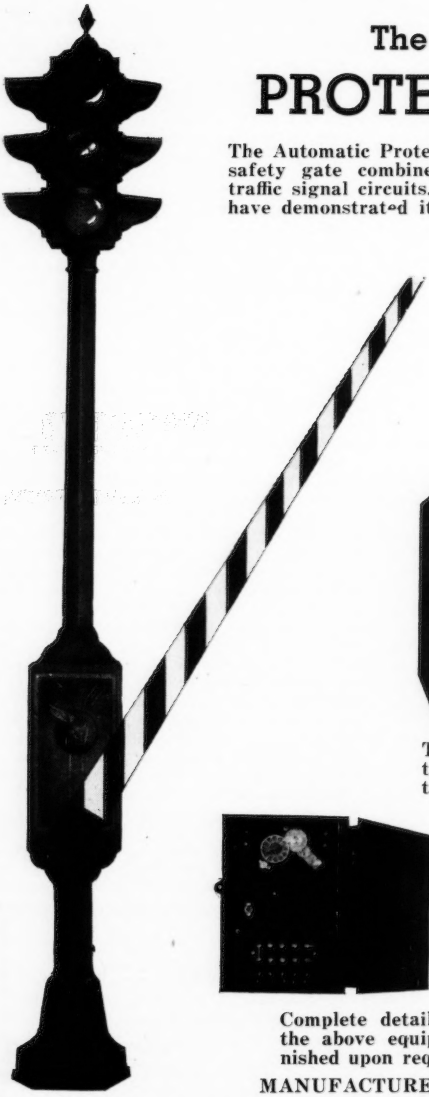
First, the work that is done is not intended to be permanent but only sufficient to serve the purposes of our Army requirements. Second, other very important Army units often depend upon, and sometimes have higher priority for, the service units which we require to assist us in our work. Finally, no personnel trained to serve our purpose can be depended upon because shifting of personnel is something very little can be done about in the Army.

The next picture to get is that half of our Traffic Engineers are located with the Transportation Corps and half with the Provost Marshal. The theoretical organization for the prosecution of traffic engineering is that T.C. outlines the program of work, i.e., selection of routes, circulation problems and the general program of traffic regulation; the Engineering Branch fabricates signs and the Provost Marshal installs and enforces the signs. In actual practice, however, the performance of these functions has depended to a large extent upon the officers in charge of

OBITUARY

Notification has been received from Mrs. Robert S. Moyer, that her husband, Captain Robert S. Moyer, Infantry, a Junior member of the I.T.E., was killed in action in Germany on April 5, 1945. He had been a prisoner of war since December, 1944, and was killed during an air attack while on a march to a prisoner of war camp near Nurenberg. Captain Moyer was a devoted and outstanding member of the Institute and the entire membership is saddened to learn of his death. We are all proud to have been professional associates and friends of his.

Captain Moyer was with the Ohio Department of Highways before going into service for his country.



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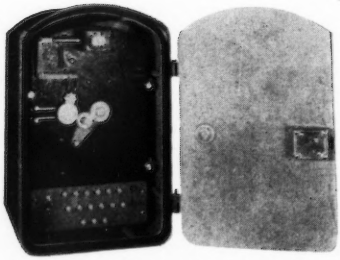

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the various base sections. Where one branch has difficulty in doing their job, it is usually done by one of the other branches. Most of the work, however, has fallen to T.C. or P.M. and in this respect the TE's in either branch have worked as one with those in the other branches, regardless of responsibility.

To take, for example, the program of redeployment—the work that is being done, regardless of branch, can be described as follows and this picture can be applied to most all of the sections:

Selection of Assembly of Staging Areas has been set up by a higher authority and involves consideration not only of road network but of many other factors such as port accommodations, water supply, etc. With the selection of the areas, we go to work. If there are roads with which we are not acquainted, road reconnaissance must be made. This includes road surface condition, roadway widths, vertical and horizontal clearances of underpasses, possible by-passes around villages and towns, sharp turns and narrow bottle-necks in villages and weight classification of bridges. All but bridge classification is done by the traffic engineers.

The Next Phase

Next come the selection of routes and the circulation plans. This work often involves considerable liaison with the local authorities, although in general little difficulty is encountered in this direction. Whenever possible, the villages are by-passed but often, because of bombed-out bridges, we have no choice. Routes are then selected through towns, avoiding as much as possible the congested areas and this many times involves the installation of a one-way street program because of the narrow streets in most French towns. It is not uncommon in this connection to have one small village with perhaps one bottleneck on the only street, to cause a one-way highway program for miles around.

Every attempt is made to keep in mind the anticipated conflicting movements involved in the routing of Army traffic itself because with the exception of a few of the larger cities, civilian traffic consists only of bicycles, pedestrians, horse-drawn vehicles and in some cities — street cars. Conflicting Army traffic movements, although not exclusively the case, are mostly confined to the vicinity of depots, staging or assembly areas and port areas. The policy in handling circulation within these areas is under the jurisdiction of the area commanders and often it requires considerable salesmanship to sell internal operation that will fit into the overall traffic pattern. There are, of course, many times when the traffic engineer is invited to help clean up a congestion problem but unfortunately construction moves so fast when it starts that suggestions are often missed. With the selection of routes in and from the areas comes the signing job.

Signing was, at one time, a job of major importance for several reasons. First, in spite of a brief standard sign manual those erecting signs did so without the full appreciation of uniformity. Second, fabrication of signs was done with whatever materials and help was available. Army personnel, French civilians, German PW's were all used as they could be obtained. Design of signs, likewise, varied depending upon who was taking the responsibility for their erection. Various installation and unit commanders, also having authority to erect directional signs from main routes to their installations, would often cover the territory for miles around and then forget to remove the signs on moving their outfits.

Signing Now Routine Job

These problems have now to a considerable extent been reduced to the stage where signing is more or less a routine job, but still with some very definite problems to be worked out. A fairly uniform code of directional and warning signs has been adopted and is being applied to the redeployment program. The same can be said regarding installation of signs. Most sections have well organized sign shops, although their methods vary considerably. There are not now so many installations moving around doing their own signing as before, but the posting of their own signs by returning units is still a major problem to be overcome.

Practically all the map preparations connected with highway routes are under the supervision of the TE's over here and include not only the routes but also POL (petrol, oil and lubrication) points, bivouac areas, ration points, critical clearance locations and other information. These maps are distributed to the Traffic Control or Regulating Points for redistribution to convoy commanders and others.

This brings up the question of traffic control which is fundamentally a Provost Marshal problem but one in which the TE often participates. This first involves the selection of the TCP locations which are manned 24 hours a day and where information can be obtained. The TCP's also serve to hold up convoys that are traveling too fast, direct them over the proper routes to their destinations or to holding areas if their destination is not known. In addition it sometimes becomes necessary to provide escort service to guide convoys over critical sections of the route, such as a long one-way bridge serving two-way traffic for both rail and rubber and where speed must be kept very, very low. It is also necessary to have police control to enforce certain one-way street operations and the TE's suggestions as to whether Italian, French or American MP's or French civil police should be used are given respectful consideration.

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This use of control to enforce one-way operations is of major importance because of lack of manpower—yes, even in the Army manpower is a problem! Every attempt is made, however, to not depend upon enforcement of one-way operation but by means of routing and signing to direct all but casual traffic in the proper direction to obtain the one-way effect.

Major road designs have not been practical because of the policy of not building for permanency but only for temporary conditions serving Army purposes. There are occasions, however, where new roads must be built, roadways widened, turning radii increased and some channelization installed. In this latter case, attention might be called to the necessity of using whatever materials can be obtained — for example, brightly painted oil drums have been found to make effective, even if not attractive, traffic circles, islands, etc. Many of the boys have also had the opportunity to try out new ideas which they were never able to try back in civil life.

Very little had been done with accident analysis prior to the arrival of the TE's. Since then much improvement has been made in obtaining accident analyses. Their use, however, has been confined mainly to enforcement because the information obtained is still insufficient to help the engineering problem.

Difficult Traffic Count

All the boys have had individual experiences which would be well worth talking about but which I am not in the position to forward to you. I have had many, but I think one which I will never forget is a traffic count I made in the Calas Staging Area, a few miles from Marseille. This particular area is running practically to capacity and stages 60,000 personnel with 15,000 men as the operating complement.

The day selected for the count was the beginning of the blowing of the "mistral"—a constant wind of about 30 M.P.H. reputedly to always last either three, six, or nine days. The area is located on a plateau, completely barren of wind-breaks and on which most of the cover had been removed during the preparation of camp sites. Since business goes on as usual in the Army and we have no sales-day or other unusual occasions, there was no excuse to postpone the count. My driver and I sat in the jeep and counted at this one intersection through which practically every vehicle in the vicinity had to pass. The whole plateau was one big cloud of fine rotted rock sand. You could only see 200 to 300 feet. Everything from jeeps to big truck-trailer jobs floated by and of the 1200 vehicles per hour in the peak, about 80 per cent made a turn. There were two Red Cross Clubs on two of the corners constantly having vehicles load and unload; several P-X huts and a post office on another corner each of which had a constant line of men all day of 100 to 150 feet long; while the fourth corner was reasonably free of patronage.

Four by four cardboard cartons would come tumbling down the main street in the wind; trucks were constantly stopping to load and unload men going to town or returning; newcomers would want information as to where their camp site was located; convoys, having priority, would hold up traffic 15 to 20 minutes at a time; the camp fire department would turn out four or five times every hour; pedestrians were walking or running in every direction through the intersection where one MP directed all movements of traffic.

I tell you it was a sight, that is, what I could see through my form fitting goggles which kept out most of the sand. I was really dirty when I got back to the hotel that night and my eyes smarted for two days afterward. Since I had planned only a seven-day trip and stayed three weeks I had to borrow money from Paul Robinette to buy some clean clothes. My personnel file being in the Paris office, I was not able to collect my pay and my clothes did not arrive from Paris until the afternoon before I left to return to Paris. Still with it all, it was one of the most interesting days since I've been overseas. The traffic count was for the purpose of selling better internal operation.

Now, Wilbur, your one other question: When are we likely to be released and return home? That none of us know and most of us would like to know. The work right now is heavy and will be for a time yet. It should not be so very long though before redeployment becomes routine and the traffic engineering problems reduced to a point where only a few men will be required. But getting a release is quite another story and will have to be handled when that time comes because it does not seem to be the policy for the Army to release anybody that it can hold. The Pacific Theater? We don't even discuss that over here.

All the gang over here in the ETO wish to be remembered to you and the other ITE members. They all will have some real stories (business and otherwise) to relate to you when they get back.

★ ★ ★

A BRIEF WORD FOR RESEARCH

Looking ahead and being dissatisfied with what you are doing is most essential. . . . Anything can pass a thing that is standing still.

Research is really nothing more than the fundamental art of sample making.—*C. F. Kettering, S.A.E. Journal.*

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PA12—Normally flashing green or amber on main street and flashing red on cross street. Press button, controller goes through one cycle of color sequence.

PA13—Normal stop and go operation. Press button, pedestrian interval and clearance interval are inserted in color sequence for one cycle. Total cycle remains constant and pedestrian time is subtracted from main street green.

PA14—Normal stop and go operation. Press button, pedestrian interval and clearance interval are added to color sequence for one cycle. Total cycle is increased by pedestrian interval.

PA15—Operates same as PA13 during the day. At night, time switch turns to normal indication of flashing green on main street and flashing red on cross street. Press button, controller gives amber clearance interval, then pedestrian interval, then clearance interval, and returns to normal flashing indication.

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PREPARING FOR—

(*Continued from page* 447)

Likewise, the boys and girls who own and want to ride bicycles on the city streets and sidewalks can be made cognizant of traffic and safety rules and regulations by being required to pass a written examination before a city license is issued for their bicycle. Of course, if bicycle licensing is not now a part of the city statutes, the necessary action on the part of the city council or commission is highly recommended. By such control, the possibility of reducing accidents involving bicycles is greatly enhanced.

Inspect Vehicles

Next, number four, the automobile itself will need periodic inspections. After the war, many old cars will still be used because of the unavailability of new ones. At that time, mechanics and automotive parts should be obtainable. Therefore, complacency toward the poor mechanical condition of a vehicle need no longer be tolerated. But right now is the time to get ready for the post-war control of automobile mechanical condition by enacting necessary legislation, allocating the necessary funds, purchasing the required equipment and planning the structural details of the "safety lanes" for the periodic inspection of the automobiles that will be driven over the streets.

Item number five directly affects the movement of traffic on the city streets. It is directly dependent on the traffic facts collected by the traffic engineer and consists of determining the necessity for establishing certain regulations concerning the directional movement of traffic. Perhaps certain streets should be established as thoroughfares, a system of one-way streets instituted or restrictions placed on right, left or all turns at specific intersections. The use of these suggested treatments will often produce encouraging results and they should be studied as a part of every city's post-war street traffic improvement program.

Planned Jobs

The first five items discussed will do little in themselves to take care of any overload of labor that may be thrust upon the city. Four of them constitute those preparatory measures that are very necessary as a foundation for any traffic program while the fifth is a fundamental traffic engineering treatment that should be studied immediately. The items to follow will represent improvements that will need immediate planning and which will, if planned properly, provide for labor and at the same time increase the safety of the city street system for those who desire to use it.

A quotation from the "Report on a Post-War Traffic Safety Program for the City of Columbus (Ohio), April 1945," prepared by the Columbus Traffic Commission, points out one of the first improvements that should be planned for those existing streets that will not be improved in the post-war Federal-aid program but will be so important in the city's through and feeder street system. The report states: "Due possibly to the restrictions imposed by wartime necessities, Columbus has been forced to get along with an irreducible minimum of proper signs, signals and pavement markings. This does not alter the obvious necessity for improvement when materials and equipment again become available. This report would be incomplete if it did not point out the gross need for a complete new system of street name signs and a restoration of worn out, illegible warning and regulatory signs."

Standardize Signs

This same recommendation could be written into a similar report for many cities. Why not plan now for the re-

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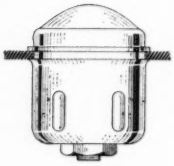

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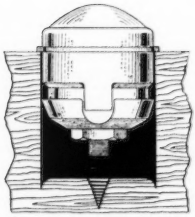

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placement of the obsolete and worn out traffic signs? A survey of required replacements could be made by the traffic engineer; or the street department or the city engineer could make it if the traffc engineer has not yet been employed. Based on the survey, the material could be requisitioned, either in the form of completed signs or in steel, paint and other accessories for a sign shop. Perhaps new posts will be needed too as well as screws, bolts and bracket material. In this same requisition, provision should be made for obtaining either reflectorized signs or reflectorizing material. Suburban streets, in particular, should be controlled by reflectorized signs because street and commercial lighting are not so intense there. A caution is necessary at this point; it should be made certain that all signs or sign designs are standard, conforming either to the Manual on Uniform Traffic Control Devices, published by the American Association of State Highway Officials, the Institute of Traffic Engineers and the National Conference on Street and Highway Safety, or to the manual issued by the authorities of the state in which the city is located.

Apply Pavement Markings

Just as important as the rejuvenation of the traffic signs is the resumption of a good pavement marking program.

How about that old striping machine purchased ten years ago? Should it not be replaced? Or, in the larger cities, how about equipping a truck with tanks, compressors and other equipment necessary to provide a pavement marking outfit that will really go out and do a day's work without so much wasting of time in the reloading of paint. To install on this truck a long hose and spray gun to paint curbs, islands, safety zones, stencils, etc., should not be forgotten.

The idea is to plan now to have this equipment on hand and have an organized program of work to be done; such a program to include the painting, according to current state standards, of center lines and lane lines on the streets of high volume; pedestrian crosswalk lanes in the business districts, at schools, churches, hospitals and other points of heavy pedestrian movement; school zone markings; railroad crossing markings; stop lines at all signalized intersections to show the motorist where to stop so that he will not encroach upon the path of pedestrians; obstructions in and near the traveled portion of the streets; curbs where parking is prohibited; parking stalls to obtain a more orderly storage of vehicles; channelizing islands where permanent ones are not planned or where a picture of resulting traffic behavior is desired before the installation of permanent ones; safety zones to caution motorists not to transgress and to serve until permanent raised ones can be built —also to make more visible the raised ones already built.

Up-to-Date Traffic Signals

As to traffic signals, some cities have controllers that were built 20 years or more ago. Many are worn out, non-adjustable to current requirements, and sadly in need of replacement. The post-war plans of every incorporated municipality should include the modernization of its traffic signal system to make it capable of allowing an efficient, safe and progressive movement of traffic. Also included in those plans should be provisions for the overhauling of every signal head and the painting of each with "federal yellow" paint, the installation of a new system of timing based on the needs of traffic, and facilities for separate pedestrian control where the pedestrian volumes so warrant.

The next item must be a joint, cooperative venture between the traffic engineer, the city engineer and the

traffic bureau of the police department. It consists of the channelizing of intersections where traffic accident experience, confusion or congestion justifies such treatment. In almost every city the intersections that would fall under this category are either already known or can be easily ascertained from accident and traffic violation records. Much can be done to aid post-war traffic if plans are made now to redesign such intersections so that fluidity and safety will be the predominant features. Provision can and should be made to paint the islands on the pavement first in order to see how traffic behaves and then build permanent islands with the necessary information signs and approach markings so that traffic can be most efficiently controlled.

While discussing intersections, it appears important to point out that there are probably many of them throughout the city that need only "day-lighting." By "day-lighting" is meant the removal of hedges, bushes, banks, trees, billboards, buildings or anything else that hampers or reduces the cross-corner sight distance for a motorist approaching the intersection.

Obviously Safer

It is believed to be obvious that an intersection without blind corners is safer than one with one or more of them. It is appreciated that it would probably not be economically justified to apply this treatment to all such intersections. However, there are undoubtedly a number of them, especially in the residential areas, at which such an improvement would greatly reduce the traffic accident probabilities.

The larger cities with extensive local mass carrier systems should take advantage of post-war planning to im-

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prove the facilities for the loading and unloading of passengers. If the passengers are to be unloaded in the middle of the street, adequate provisions should be planned for their safety. Painted or raised islands, well designed, marked and illuminated, would fulfill this requirement. Where the passengers are unloaded at the curb, the length of curb required should be well posted and the parking of cars prohibited therein.

The illumination of safety zones was just mentioned. Safety zones are not the only locations where more light is needed in our cities. The previously mentioned Columbus Traffic Commission report, points out that "accident experience in Ohio's capital includes an alarming percentage of pedestrian mishaps. In 1944, 21 pedestrians were killed, 56.7 per cent during hours of darkness." Columbus is not the only city wherein pedestrians are killed at night. Post-war plans should include more efficient lighting of critical locations, critical because of pedestrian accidents that have occurred there or because of the high exposure factor.

Article after article has been written on the parking question. City authorities surely are aware of the situation in their municipality, so all that will be said here is that any city that does not plan for better and more adequate terminal facilities in the business areas for the people who wish to trade there will probably experience an economic situation that will be far from desirable.

All of these suggested improvements to the municipal vehicular transportation system will, if carried out, decidedly improve the operating characteristics of that system and at the same time take care of some of that extra labor that may be available after the war.

There are two important things that every city should start on now unless, of course, they already exist and are functioning satisfactorily. They will not provide for any labor and are not eligible for inclusion in post-war plans. Yet they are requisites to an integrated program for the efficient and safe operation of vehicles on the traffic facilities of the city.

The first is a program for traffic safety education. A safety council or commission, composed of members who will insure an active program, should be formed immediately. And just as soon as organization details are finished, this body should plan for an educational program for immediate and post-war traffic safety, utilizing the newspapers, radio, movies, schools and any other facilities available. If the schools do not have schoolboy patrols, they should be planned for next fall when school opens. The people should have constantly before them reminders to be safe whether driving or walking.

Improvement In Enforcement

The second is a program for improvement in the enforcement of traffic regulations. Although every member of the police force has authority to arrest a motorist for a traffic violation, there should also be established a division of the department especially trained in traffic accident investigation and traffic safety education. This division should be formed at once, provided with modern devices such as loud speaker equipment, radio, photographic equipment and the like, and trained for accident investigation by specialists in that kind of work. It also would be an excellent idea to install a traffic violation ticket system that discourages "fixing."

Incidentally, there are several items included in this discussion that county authorities also could advantageously include in their post-war plans in order that traffic operation on the highways under their jurisdiction will be safer and more efficient.

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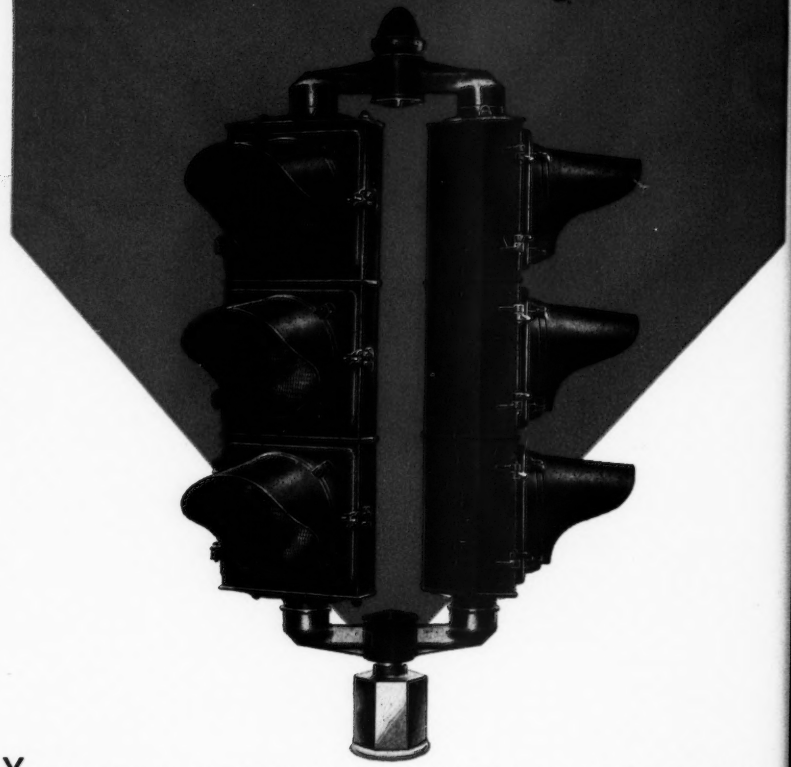

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